

DOCKETED

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Project Title:	Nonresidential Building Energy Use Disclosure Program Rulemaking
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Document Title:	CEC Presentation
Description:	Proposed Changes to the Nonresidential Building Energy Use Disclosure Program
Filer:	Erik Jensen
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Proposed Changes to the Nonresidential Building Energy Use Disclosure Program (AB 1103) Regulations

August 25, 2015



Housekeeping

- **Restrooms**
- **Snack Bar**
- **Emergency Exits**

Nonresidential Building Energy Use Disclosure
Program (AB 1103) Staff Workshop
August 25, 2015

Welcome, schedule, and housekeeping	9:00 AM
Section 1681 - Definitions	9:15 AM
Section 1682 - Schedule	9:45 AM
Section 1683 - Data Releases, Report	10:15 AM
Break	11:00 AM
Section 1684 - Disclosures	11:15 AM
Section 1685 - Exemption from Disclosure	12:00 PM
Open Comment Period	12:15 PM
End	1:00 PM

**Whole-building energy use data access issues addressed since
February 20, 2015 workshop:**

- Difficulty requesting data for building owners (meter matching).
- Difficulty receiving data from utilities (connection to Portfolio Manager's Web Services).
- Guidance to utilities to preserve confidentiality.

California Code of Regulations
Title 20, Division 2, Chapter 4, Article 9
Sections 1680-~~1684~~1685

Section 1681. Definitions

- a) “Building Owner” means a person possessing title or deed to a nonresidential building, or ~~an agent~~ any party authorized to act on behalf of a person possessing title or deed.

Rationale: Added deed as a document with which a building owner may demonstrate ownership.

- b) “Complete calendar month” means a period of time corresponding to one month of the calendar, starting on the first day of the month and ending on the last day of the month.

Rationale: Portfolio Manager requires 12 complete calendar months of data to benchmark a building. Billing cycles often do not coincide with the beginning and end of a calendar month.

Section 1681. Definitions

b) ~~“Data Verification Checklist” means a report generated by Portfolio Manager that summarizes a property’s physical and operating characteristics.~~

Rationale: Data Verification Checklist replaced with Statement of Energy Performance (see below).

e) ~~“Energy Use Data” means a record of kilowatt hours, therms, or any other measure of energy recognized by Portfolio Manager.~~

Rationale: Definition merged with ‘Whole-building energy use data’ definition to more closely reflect statutory intent.

Section 1681. Definitions

- f) “Nonresidential Building” means a building of occupancy type A, B, E, I-1, I-2, M, R1, S, or Type U parking garages, as defined in the California Building Code, Title 24, Section 302 et seq. (~~2007~~ 2013).
- h) “Prospective buyer” means a person ~~who has submitted a written offer to purchase a building~~ whose offer to purchase a building has been accepted by the building owner.

Rationale: Redefining “prospective” limits the provision of building energy use information to those parties engaged in a bonafide transaction.

Section 1681. Definitions

- j) “Prospective lessee” means a person ~~who has submitted an~~ whose application to lease an entire building has been accepted by the building owner.

Rationale: Redefining “prospective” limits the provision of building energy use information to those parties engaged in a bonafide transaction.

- k) “Statement of Energy Performance” means a Portfolio Manager report that lists a property’s annual energy consumption, benchmarking score if available, and energy use intensity.

Rationale: Changing the form used for disclosure from the Data Verification Checklist to the Statement of Energy Performance.

Section 1681. Definitions

m) “Whole-building energy use data” means a record of kilowatt hours, therms, or any other measure of energy fuel type recognized by Portfolio Manager summated for all the meters and fuel types associated with the building.

Rationale: This revision clarifies the statutory intent of providing energy use data “for the entire building” to the building owner for disclosure purposes.

Comments on Section 1681. Definitions

- In room
- WebEx
- Phone

Section 1682. Schedule of Implementation

- a) Utilities and energy providers shall connect with Portfolio Manager's Web Services according to the following schedule:
Rationale: Requiring utilities to connect to Web Services avoids building owners having to upload data or enter it manually. This ensures data integrity and ease of compliance.
- 1) By July 1, 2016, for utilities and energy providers with over 100,000 service accounts.
 - 2) By July 1, 2017, for utilities and energy providers with over 50,000 service accounts.

Section 1682. Schedule of Implementation

b) A building owner shall comply with this article according to the following schedule:

~~3) On and after July 1, 2016, for a building with a total gross floor area measuring at least 5,000 square feet and up to 10,000 square feet.~~

Rationale: Buildings smaller than 10,000 square feet represent a small percentage of California commercial floor space. Exempting these buildings would eliminate the reporting burden for smaller property owners.

Comments on Section 1682. Schedule of Implementation

- In room
- WebEx
- Phone

Data description

Who will have access

<p>Unaggregated meter-specific energy consumption data + personally identifiable information</p>	<p>Most confidential</p>	<p>Building owner (already has)</p>
<p>Systematic access to aggregated* or obfuscated energy consumption data for transaction-based disclosure**</p>		<p>Building owner</p>
<p>One-time annual aggregated* or obfuscated energy consumption data</p>		<p>Buyer, lessee, or lender</p>
<p>Benchmark derived from aggregated* whole-building energy use data</p>	<p>Least confidential</p>	<p>Public <i>(Not applicable under AB 1103 mandate.)</i></p>

**3 or more service accounts*

***Buildings subject to PRC 25402.10*

1683. ~~Disclosures~~ Data Releases, Report

- a) ~~At least 30 days before a disclosure is required by Section 1683, a~~ As early as possible, or soon after a building becomes available for sale or lease, or a loan application is submitted, the building owner shall open an account or update an existing account for the same building on the EPA's ENERGY STAR® program Portfolio Manager website, and within the account: request all utilities and energy providers serving the building to release whole-building energy use data from at least the most recent 12 complete calendar months.

Rationale: Requiring building owners to request the data before the start of the transaction should provide ample time to obtain the data.

1683. ~~Disclosures~~ Data Releases, Report

- ~~1) Provide the owner name and the owner e-mail address;~~
- ~~2) Provide the building street address, city and ZIP code, and the year in which the building was constructed;~~
- ~~3) Identify all sources of energy use data for the entire building, for at least the most recent 12 complete calendar months; and~~
- ~~4) Provide space use characteristics as specified by Portfolio Manager for all space types in the building.~~

Rationale: Details of the Portfolio Manager process are not necessary in these regulations and do not reflect situations where the Portfolio Manager account is already set up.

1683. ~~Disclosures~~ Data Releases, Report

~~request all utilities and energy providers serving the building to release energy use data for the entire building from at least the most recent 12 complete calendar months for specified meters or accounts to the owner's or operator's Portfolio Manager Account.; or, the owner or operator may manually enter all energy use data for the entire building from at least the most recent 12 complete calendar months to the owner's or operator's Portfolio Manager account. The energy use data can be used for disclosure pursuant to Section 1684(a) for up to one year from the date of request.~~

Rationale: Making the energy use data valid for one year reduces the burden on building owners if a property transaction takes longer than anticipated.

1683. ~~Disclosures~~ Data Releases, Report

- b) As soon as practicable and no later than 30 days after receiving a request under subdivision (a) of this section, a utility or energy provider shall upload ~~all~~ whole-building energy use data for the ~~entire~~ specified building address from at least the most recent 12 complete calendar months ~~for the specified meters or accounts~~ to the building owner's or operator's Portfolio Manager Account, aggregated by fuel type.

1683. ~~Disclosures~~ Data Releases, Report

For buildings with two or fewer service accounts of any fuel type, the utility shall provide a randomly generated number that is within 10% of actual monthly usage. A utility or energy provider that is not required to use Portfolio Manager's Web Services according to Section 1682(b) may provide the energy use data to the building owner electronically using the spreadsheet template provided by the U.S. Environmental Protection Agency.

1683. ~~Disclosures~~ Data Releases, Report

~~If a building has a utility or energy provider account for which the owner is not the customer of record, the utility or energy provider shall aggregate or use other means to reasonably protect the confidentiality of the customer. A utility or energy provider may verify a request or ask for clarification before releasing data~~ request a copy of the current title or deed for a building for which energy use data is requested as verification of ownership.

1683. ~~Disclosures~~ Data Releases, Report

Rationale: The statute requires utilities “to maintain records of the energy consumption data of all nonresidential buildings” and provide energy use data for the entire building (not individual meters) to the building owner at the time of a bonafide transaction. The current regulations require the building owner to identify all accounts or meters associated with a building. This information is onerous for the building owner to collect. This change would require utilities to provide whole-building energy use data based on building address.

1683. ~~Disclosures~~ Data Releases, Report

Allowing utilities to provide energy use data by sending a spreadsheet clarifies compliance for smaller utilities and energy providers not connected to Portfolio Manager's data exchange services.

1683. ~~Disclosures~~ Data Releases, Report

- c) Utilities and energy providers shall not require tenant consent or any information that is not under the sole control of the building owner.

Rationale: Confirms that utilities must provide data to building owners involved in covered transactions without requiring tenant involvement.

1683. ~~Disclosures~~ Data Releases, Report

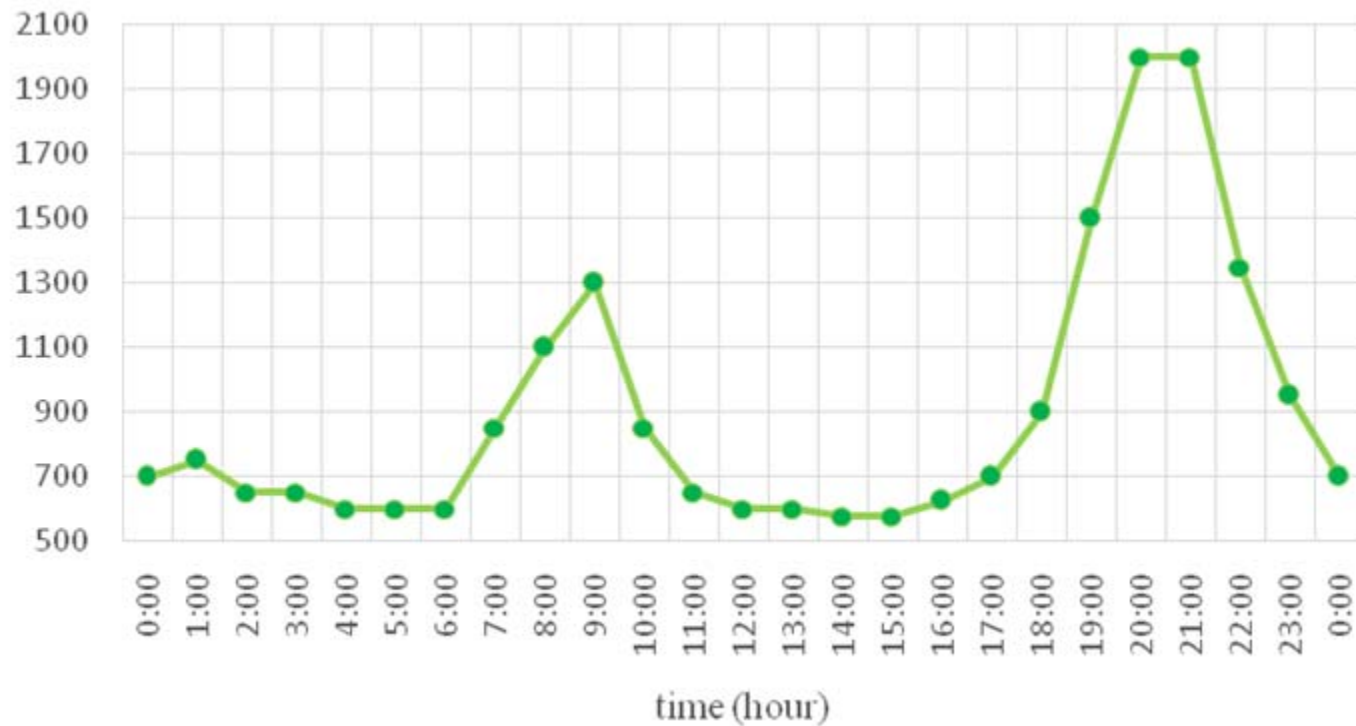
~~d) In the event that the Energy Commission accesses the data submitted pursuant to subdivision (c) of this Section, the Energy Commission shall treat the data as confidential consistent with state and federal laws.~~

Rationale: The Energy Commission will no longer receive actual energy consumption data.

Privacy Concerns

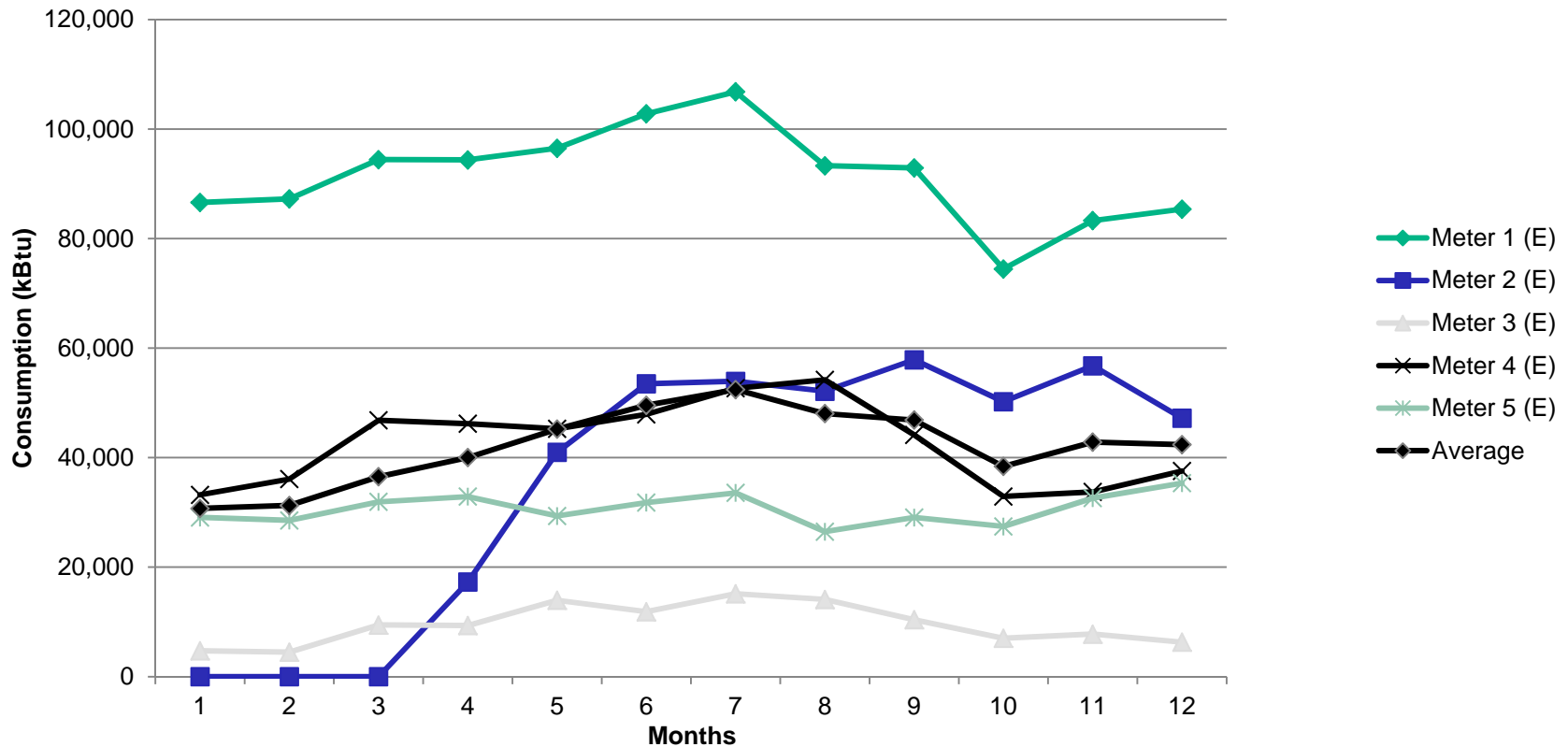
- Energy Consumption details
- Number of people and presence
- Daily Schedule
- Information about equipment or processes

Tenant Level Hourly/Daily Time Series Data with specific events that could be modeled for misuse



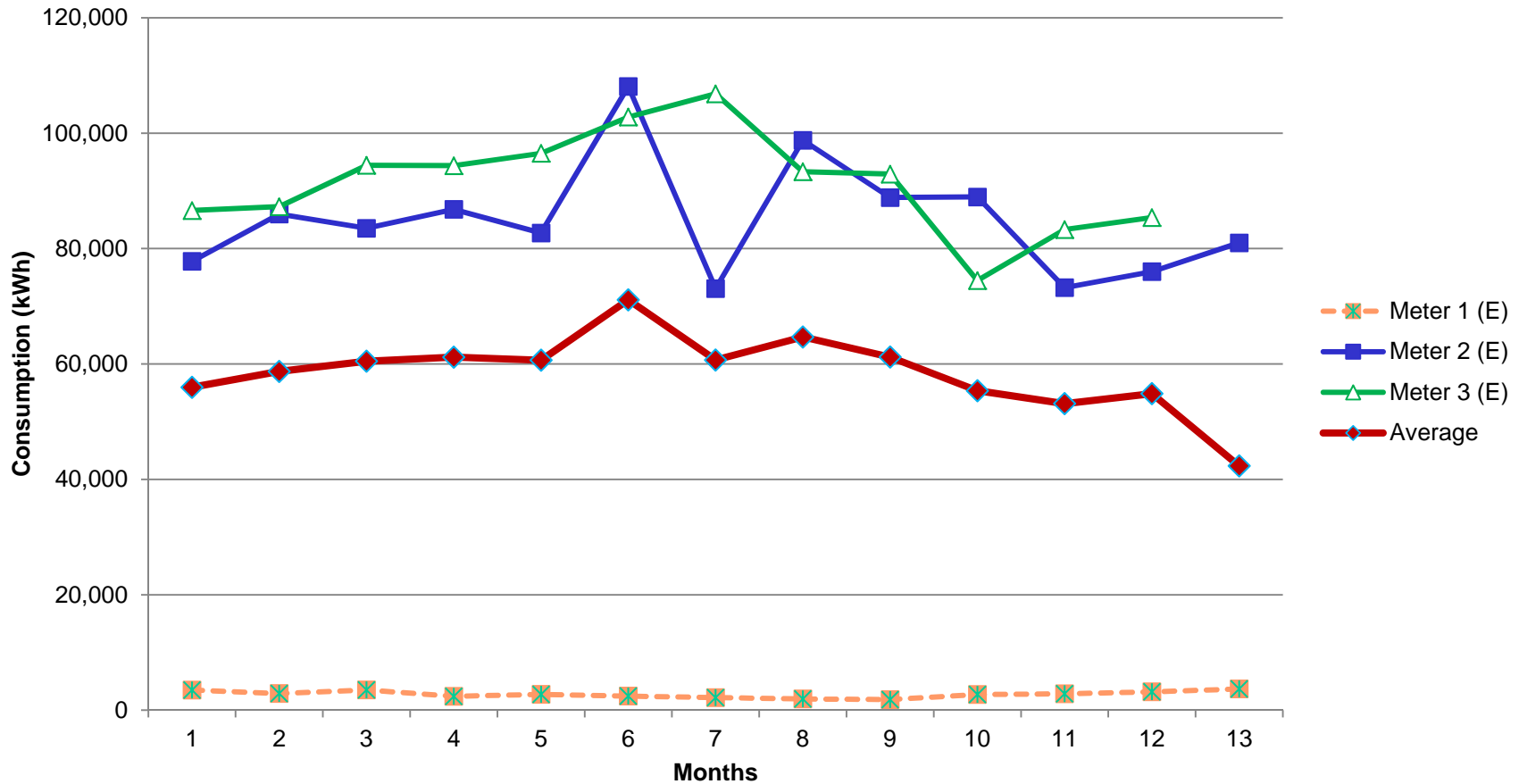
Monthly tenant profiles versus average building profile

Retail Store Total Annual Consumption (kBtu)



Monthly tenant profiles versus average building profile additional example

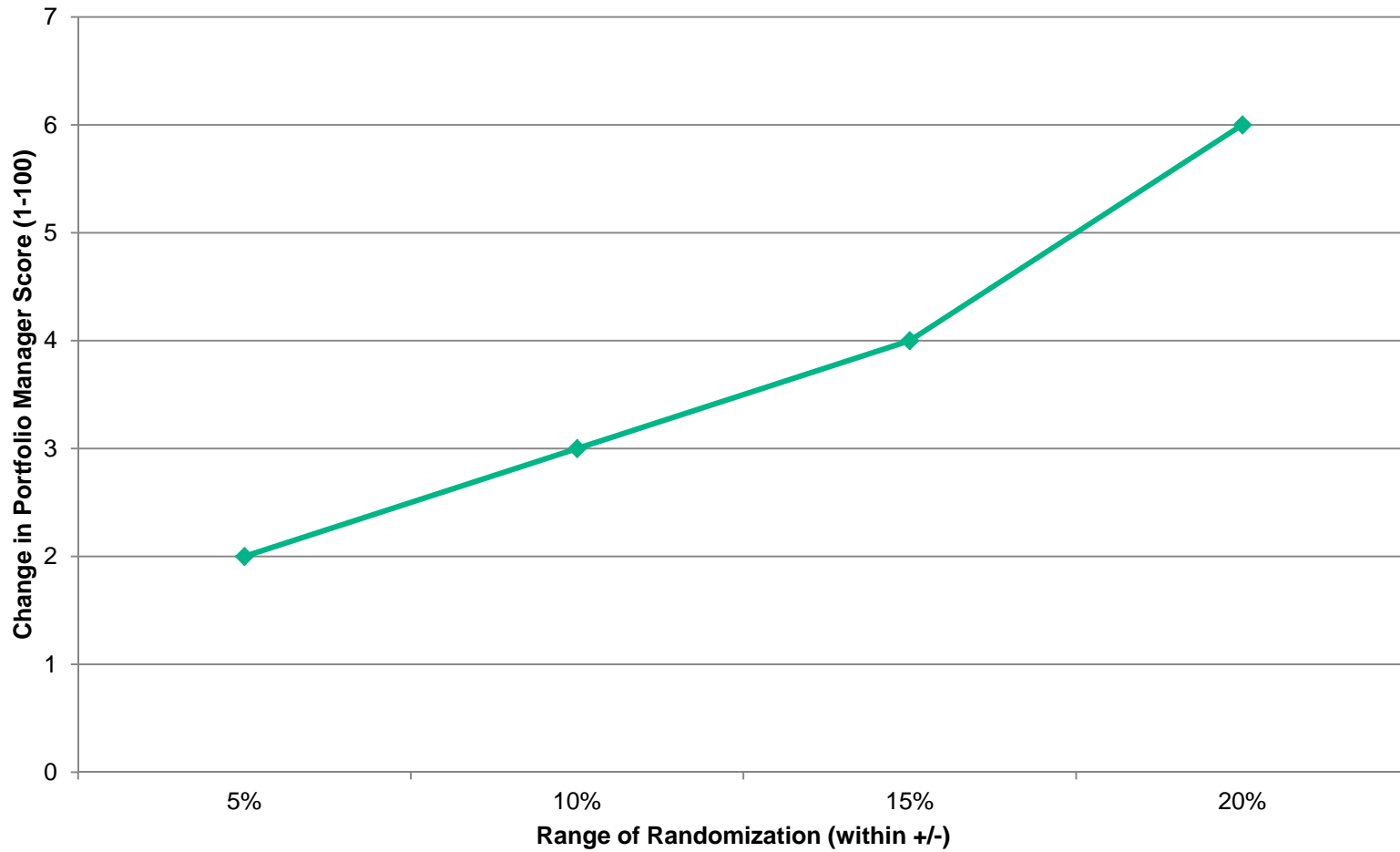
Office Total Annual Consumption (kWh)



The Energy Commission defines re-identification as:

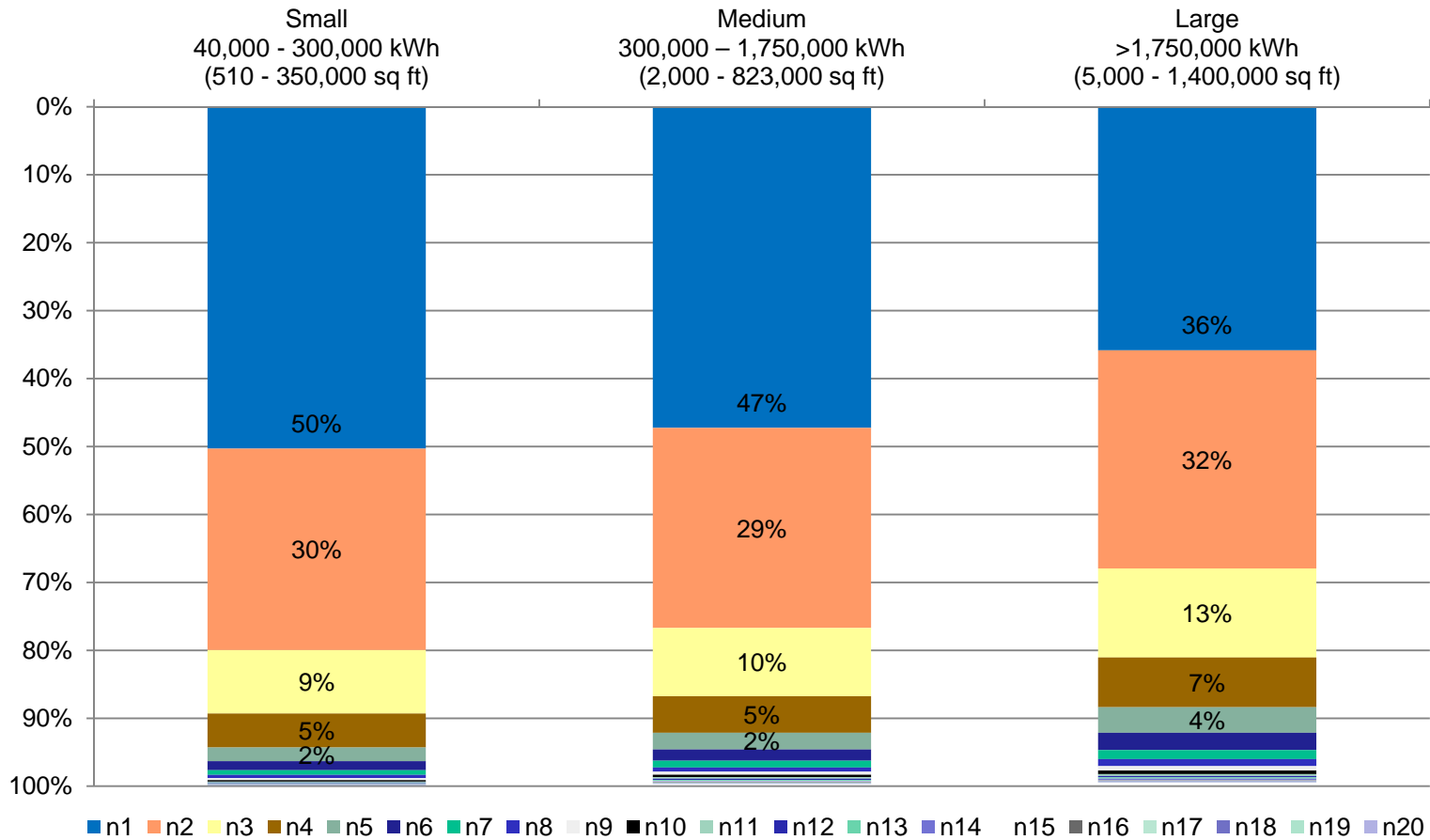
- 1) To identify accurately (within 1%) and with near-certainty, the hourly and/or daily energy usage profile of an individual service account from the summated energy usage of all accounts within that building, **and**
- 2) Associate the energy usage profile with personally identifiable information.

Portfolio Manager Score Change vs Randomization Range (Average of 3 building types; each modeled 30 times per range)



Commercial End-Use Survey (IOUs, data obtained with special permission from CPUC)

% of sites* with n service accounts



*A site is a single location with a business that can make energy decisions

Statistical Tests Performed:

(To verify that re-identification is not possible when data from three or more service accounts is aggregated.)

- **Anova: Single- and Two-Factor With and Without Replication:** A collection of statistical models used to analyze the differences among group means and their associated procedures (such as "variation" among and between groups).
- **Correl:** A correlation coefficient to determine the relationship between two properties.
- **Covariance:** A measure of how much two random variables change together.
- **Exponential Smoothing:** A rule of thumb technique for smoothing time series data, particularly for recursively applying as many as 3 low-pass filters with exponential window functions.

Statistical tests... (contd.)

- **F-Test Two Sample for Variances:** Used when comparing statistical models that have been fitted to a data set, in order to identify the model that best fits the population from which the data were sampled.
- **Histogram:** A graphical representation of the distribution of numerical data.
- **RSQ:** A statistical measure that represents the percentage of a trend's movements that can be explained by movements in a benchmark index.
- **Moving Median:** Smooth sequential data since the median is less sensitive to the effects of outliers than the arithmetic mean.

Statistical tests... (contd.)

- **Regression:** Estimating the relationships among variables in a trend.
- **Variance of series:** Statistical measure of variation. It means that the higher the variance, the more different values.
- **Averaging standard deviations:** A measure that is used to quantify the amount of variation or dispersion of a set of data values.
- **Chi-squared:** Test of how likely it is that an observed distribution is due to chance. It is also called a "goodness of fit" statistic, because it measures how well the observed distribution of data fits with the distribution that is expected if the variables are independent.

Statistical tests... (contd.)

- **STEYX:** Calculates the standard error for the straight line of best fit through a supplied set of x- and y- values.
- **Logest:** Calculates the exponential curve that best fits a supplied set of x- and y- values.
- **Linest:** Calculates the statistics for a line by using the "least squares" method to calculate a straight line that best fits your data, and then returns an array that describes the line.

In Summary:

1. Using average or total energy consumption to proxy an individual usage cannot with certainty give an accurate representation of variability over a year.
2. Monthly energy consumption data doesn't provide any detail regarding usage patterns which may be considered proprietary by certain businesses.
3. *..Energy Profile matching is one step removed from re-identification-* PNNL Study, 2014.

Comments on Section 1683. Data Releases, Report

- In room
- WebEx
- Phone

BREAK
10:45 – 11:00

1684. ~~Data Releases, Report~~Disclosures

- a) A building owner shall disclose the ~~Data Verification Checklist~~ Portfolio Manager Statement of Energy Performance, or other disclosure form approved by the Energy Commission, for the building to:

Rationale: The Statement of Energy Performance does not show energy use data by individual meters, which significantly preserves the confidentiality of the customer. It also contains lesser number of unnecessary fields (as compared to Data Verification Checklist) that currently cause confusion. If, in the future, the EPA introduces reports that are more appropriate for transactional disclosure reporting, the Energy Commission may approve them for satisfying this section.

1684. ~~Data Releases, Report~~Disclosures

- 1) A prospective buyer of the building, no later than 24 hours ~~prior to execution of the sales contract~~ three days after the signing of the purchase and sales agreement.

Rationale: The Energy Commission has interpreted “execution of the sales contract” to mean the close of escrow. Comments received during the Informational Proceeding stated that disclosure is currently made too late to be useful for decision making.

1684. ~~Data Releases, Report~~Disclosures

- 3) A prospective lender financing the entire building, no later than ~~submittal~~ final approval of the loan application.
Rationale: Gives the building owner more time to receive energy use data.

1684. ~~Data Releases, Report~~Disclosures

- b) After the building owner has made all utilities and energy providers serving a building have complied with subdivision (b) of this section, and before the disclosure required pursuant to Section 16831684, the building owner shall ~~generate~~ submit the to the Energy Commission via the Portfolio Manager reporting link provided on the program website information deemed necessary to determine compliance. ~~Data Verification Checklist from Portfolio Manager and electronically submit the Data Verification Checklist to the Energy Commission. The Data Verification Checklist shall expire 30 days after it is generated.~~

1684. ~~Data Releases, Report~~Disclosures

- b) Rationale: The Custom Report Template reporting feature provides an easier way for owners to submit compliance information to the Energy Commission. Building owners will no longer be required to email a PDF of the disclosure report to the Energy Commission.***

1684. ~~Data Releases, Report~~Disclosures

- c) Nothing in these regulations permits an owner to use un-aggregated tenant energy use data for purposes other than compliance with Public Resources Code, Section 25402.10.

Comments on Section 1684. Disclosures

- In room
- WebEx
- Phone

1685. Exemption from Disclosure

A building that is scheduled to be completely demolished one year or less from the date of signing of a purchase and sales agreement or a lease agreement is exempt from disclosure pursuant to these regulations.

Rationale: Addresses comments that when a building is scheduled for demolition, energy use data is of little use.

Comments on Section 1685. Exemption from Disclosure

- In room
- WebEx
- Phone

Open Comment Period

**Written comments for Docket No. 15-OIR-04 are
due by 4 p.m. on September 8, 2015.**

**Send to docket@energy.ca.gov or
California Energy Commission
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512**

**Erik Jensen
(916) 654-4166**

Erik.Jensen@energy.ca.gov

**Laith Younis
(916) 654-4015**

Laith.Younis@energy.ca.gov